REMARKS

Claims 1-5, 7-11, 13-18 and 20-22 are pending in the application.

Claims 1-5, 7-11, 13-18 and 20-22 are rejected.

Claims 1, 7, 14 and 21-22 are amended.

Reconsideration and allowance of claims 1-5, 7-11, 13-18 and 20-22 is respectfully requested in view of the following:

Objection to Claims

Claims 1-5 were objected to because of informalities. Claim 1 has been amended to remove such informalities and Applicants respectfully request that the objection be withdrawn.

Responses to Rejections to Claims – U.S.C. §112

Claims 1-22 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner argues that term "secondary force" is not clear as to what type of force the secondary force is and what structural elements are creating this force. The term "secondary force" has been changed to "non-compressive force...due to the coupling of the curved resilient load member to the frame member." Therefore, Applicants submit that the rejection has been rendered moot and respectfully request that it be withdrawn.

Responses to Rejections to Claims – 35 U.S.C. §103

Claims 1-2, 4-5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva et al (U.S. Publication No. 2005/0030718) (Villanueva) in view of Hopfer et al (U.S. Patent No. 5,761,036) (Hopfer). Claims 3, 7-11, 13-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva in view of Hopfer and further in view of Ma (U.S. Patent No. 6,791,847) (Ma). These rejections are not applicable to the amended claims.

Independent claim 1 requires: "...a frame member comprising a heat sink engagement surface...a curved resilient load member comprising a load member surface...whereby the connection of the second end (of the curved resilient load member to the frame member) deforms the curved load member into a substantially parallel engagement with the processor such that the load member surface is located below the heat sink engagement surface and the curved resilient load member applies a constant compressive force to the processor sufficient to mate the processor with the processor socket...whereby the deformation of the curved resilient

load member into a substantially parallel engagement with the processor results in a non-compressive force that is not transferred to the processor socket due to the coupling of the curved resilient load member to the frame member."

Independent claim 7 requires: "...a frame member comprising a heat sink engagement surface...a curved resilient load member comprising a load member surface...a heat sink mounted on the frame member in engagement with the heat sink engagement surface and above the load member surface...whereby the deformation of the curved resilient load member into a substantially parallel engagement with the processor results in a non-compressive force that is not transferred to the processor socket due to the coupling of the curved resilient load member to the frame member."

Independent claim 14 requires: "...a frame member comprising a heat sink engagement surface...a curved resilient load member comprising a load member surface...whereby the connection of the second end (of the curved resilient load member to the frame member) deforms the curved load member into a substantially parallel engagement with the processor such that the load member surface is located below the heat sink engagement surface and the curved resilient load member applies a constant compressive force to the processor sufficient to mate the processor with the processor socket... a heat sink connected to the frame member and above the load member surface...whereby the deformation of the curved resilient load member into a substantially parallel engagement with the processor results in a non-compressive force that is not transferred to the processor socket due to the coupling of the curved resilient load member to the frame member."

Independent claim 21 requires: "...mounting a frame member on the board member, wherein the frame member comprises a heat sink engagement surface...providing a curved resilient load member comprising a load member surface...whereby the connection of the second end (of the curved resilient load member to the frame member) deforms the curved load member into a substantially parallel engagement with the processor such that the load member surface is located below the heat sink engagement surface and the curved resilient load member applies a constant compressive force to the processor sufficient to mate the processor with the processor socket; providing a heat sink connected to the frame member adjacent to the load member and in engagement with the heat sink engagement surface... whereby the deformation of the curved resilient load member into a substantially parallel engagement with the processor results in a non-compressive force that is not transferred to the processor socket due to the coupling of the curved resilient load member to the frame member."

Independent claim 22 requires: "...a frame member comprising a heat sink engagement surface...a curved resilient load member comprising a load member surface...whereby the connection of the second end (of the curved resilient load member to the frame member) deforms the curved load member into a substantially parallel engagement with the processor such that the load member surface is located below the heat sink engagement surface and the curved resilient load member applies a constant compressive force to the processor sufficient to mate the processor with the processor socket... a heat sink mounted on the frame member and supported by the heat sink engagement surface above the load member surface...whereby the deformation of the curved resilient load member into a substantially parallel engagement with the processor results in a non-compressive force that is not transferred to the processor socket due to the coupling of the curved resilient load member to the frame member."

As the PTO recognizes in MPEP §2142:

> The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

The USPTO clearly cannot establish a *prima facie* case of obviousness in connection with the amended claims for the following reasons:

35 U.S.C. §103(a) provides that:

> [a] patent may not be obtained...if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.... (emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluation. However, the references, alone, or in any combination, do not teach a load member surface on the curved resilient load member that is located below a heat sink engagement surface on the frame member when the curved resilient load member is deformed into a substantially parallel engagement with the processor and applying a constant compressive force to the processor sufficient to mate the processor with the processor socket, as required by claim 1.

The references, alone, or in any combination, do not teach a heat sink mounted on the frame member in engagement with a heat sink engagement surface on the frame member and above a load member surface on the curved resilient load member when the curved resilient

load member is deformed into a substantially parallel engagement with the processor and applying a constant compressive force to the processor sufficient to mate the processor with the processor socket, as required by claim 7.

In addition, the references, alone, or in any combination, do not teach a load member surface on the curved resilient load member that is located below a heat sink engagement surface on the frame member when the curved resilient load member is deformed into a substantially parallel engagement with the processor and applying a constant compressive force to the processor sufficient to mate the processor with the processor socket, and a heat sink that is connected to the frame member and above the load surface member, as required by claim 14.

Furthermore, the references, alone, or in any combination, do not teach a load member surface on the curved resilient load member that is located below a heat sink engagement surface on the frame member when the curved resilient load member is deformed into a substantially parallel engagement with the processor and applying a constant compressive force to the processor sufficient to mate the processor with the processor socket, and a heat sink that is connected to the frame member adjacent to the load member and in engagement with the heat sink engagement surface, as required by claim 21.

Also, the references, alone, or in any combination, do not teach a load member surface on the curved resilient load member that is located below a heat sink engagement surface on the frame member when the curved resilient load member is deformed into a substantially parallel engagement with the processor and applying a constant compressive force to the processor sufficient to mate the processor with the processor socket, and a heat sink that is mounted to the frame member and supported by the heat sink engagement surface above the load member surface, as required by claim 22.

Villanueva discloses a processor retainer 12 that couples to the retention frame 14 such that the perimeter of the processor retainer 12 rests on a surface of the retention frame 14 when the processor retainer 12 is in a closed position and retaining the CPU 28 (see Fig. 1 of Villanueva, open position, and Fig. 2 of Villanueva, closed/retaining position). Because of the structure and coupling of the processor retainer 12 and retention frame 14 of Villanueva, there is no way for the processor retainer 12 to include a load member surface that is located below a heat sink engagement surface (as defined by the present disclosure) on the retention frame 14. The Examiner argues that "the Hopfer reference is being used for the teaching that the resilient load member can be curved and not for the teaching of the mounting technique of the resilient

load on the processor socket". The replacement the processor retainer 12 of Villanueva with the retention spring 16 of Hopfer does not remedy this deficiency, as the retention spring 16 of Hopfer would still engage perimeter of the processor retainer 12 of Villanueva. The amended independent claims above claim different permutations of the disclosure that require that the heat sink be positioned above the load member surface when the heat sink is secured to the frame member, and that the load member surface be located below the heat sink engagement surface when the curved resilient load member is deformed into a substantially parallel engagement with the processor (Figure 12, paragraph [0026], and paragraph [0027], lines 14-17). This structural difference from the prior art allows the curved resilient load member 50 of the present disclosure to apply the constant compressive force to the processor sufficient to mate the processor with the processor socket, as the curved resilient load member is mounted low on the frame member to generate a high compressive force when the curved resilient load member is deformed into a substantially parallel engagement with the processor.

As argued in response to previous office actions, the processor of Villanueva is not of the type that requires a constant compressive force in order to mate with its processor socket, and the processor retainer 12 disclosed by Villanueva does not provide such a force, but rather provides that "The lip along the inner diameter of the processor retainer opening 20 engages the outer diameter edge of the CPU 28 to restrict movement of CPU 28 from socket 30" (paragraph [0022] lines 4-7), and "Contact of lip 32 with CPU 28 provides a retaining force that retains processor in socket 30 even if upward force is applied to heat sink 34 and translated to CPU 28 by coupling of thermal grease between heat sink 34 and processor 28" (paragraph [0023], lines 5-9). Villanueva is concerned with preventing a failure resulting from the heat sink being bonded to the processor with a thermal grease such that the processor pins may be pulled from the processor socket when the system experiences a shock event that causes the heat sink to exert high forces on the processor. The processor retainer of Villanueva simply provides "a retaining force" to "maintain" the processor in the processor socket and/or to "restrict movement" of the processor from the socket when a force is applied to the heat sink that is transferred to the processor. Ma discloses nothing to remedy these deficiencies.

Dependent claims 2-5, 8-11, 13, 15-18 and 20 depend from and further limit independent claims 1, 7, 14, 21 and 22 and are allowable for at least the reasons stated above.

Therefore, it is impossible to render the subject matter of the claims as a whole obvious based on a single reference or any combination of the references, and the above explicit terms of the statute cannot be met. As a result, the USPTO's burden of factually supporting a *prima*

facie case of obviousness clearly cannot be met with respect to the claims, and a rejection under 35 U.S.C. §103(a) is not applicable.

There is still another compelling, and mutually exclusive, reason why the references cannot be combined and applied to reject the claims under 35 U.S.C. §103(a).

The PTO also provides in MPEP §2142:

> [T]he Examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the Examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. ...[I]mpermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

As set forth above, none of these references provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103(a) rejection of the claims.

In this context, the MPEP further provides at §2143.01:

> The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teaches of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In the present case it is clear that the USPTO's combination arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in either reference for the combination as applied to the claims. Therefore, for this mutually exclusive reason, the USPTO's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to the claims, and the rejection under 35 U.S.C. §103(a) is not applicable.

Therefore, independent claims 1, 7, 14, 21 and 22 and their respective dependent claims are submitted to be allowable for at least the reasons stated above.

In view of all of the above, the allowance of claims 1-5, 7-11, 13-18 and 20-22 is respectfully requested.

The amended claims are supported by the original application.

The Examiner is invited to call the undersigned at the below-listed telephone number if a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

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